

AMENDMENTS TO THE CLAIMS

1.- 15. (Canceled).

16. (Currently Amended) A method of producing a nonaqueous secondary battery, comprising the steps of:

assembling a negative electrode, a positive electrode and a separator into a final battery form;~~and performing the method of producing the solid electrolyte according to claim 3~~

combining an amount of electrolyte solution and an amount of monomer;

introducing the amount of electrolyte solution and the amount of monomer into the final battery form; and

crosslinking the monomer in the presence of the electrolyte such that a first portion of the electrolyte solution forms a gel with the crosslinked polymer and a second portion of the electrolyte forms a separated phase of liquid electrolyte solution.

17. (Currently Amended) The method according to claim 16, wherein ~~in the step of performing the method of producing the electrolyte, the combining comprises the electrolyte is prepared, by~~ dissolving a low molecular weight compound that is polymerizable in the electrolyte solution in advance, ~~and subjecting the resultant solution to polymerization reaction to form a crosslinked polymer.~~

18. (Original) The method according to claim 17, wherein the degree of crosslinking of the crosslinked polymer is controlled by a combination of a low molecular weight compound having a single reaction point and a low molecular weight compound, which functions as a crosslinking agent, having two or more reaction points.

19. (Original) The method according to claim 18, wherein a homopolymer of the low molecular weight compound having a single reaction point contains a low molecular weight compound that is soluble in the electrolyte solution.

20. (Original) The method according to claim 17, wherein a (meth)acrylate monomer as the polymerizable low molecular weight compound is used.

21. (Original) The method according to claim 18, wherein ethylene dimethacrylate as the low molecular weight compound functioning as crosslinking agent is included.

22. (Canceled).

23. (New) A nonaqueous secondary battery made by the method of claim 16.
24. (New) The method according to claim 16, wherein the assembling comprises:
laminating the positive electrode and the negative electrode through the separator
and incorporating the electrodes into a battery cell.
25. (New) The method according to claim 16, wherein the combining comprises
selecting the mass ratio of the amount of electrolyte solution and the amount of monomer based
on the crosslink density of the crosslinked polymer so as to exceed the mass ratio at which the
electrolyte can be contained in the crosslinked polymer in gel phase.
26. (New) The method according to claim 16, wherein the crosslinking comprises
heating the final battery form for a time period in the range of two minutes to two hours.
27. (New) The method according to claim 16, wherein the crosslinking comprises
heating the final battery form for approximately 80 minutes.
28. (New) The method of producing a nonaqueous secondary battery, the method
comprising:
assembling a negative electrode, a positive electrode, and a separator to form a
battery;
injecting an undiluted solution of electrolyte containing electrolyte solution and
monomers capable of crosslinking into said battery;
polymerizing and crosslinking the solution; and
obtaining a solid electrolyte, comprising an electrolyte solution and a crosslinked
polymer that is chemically crosslinked, wherein the electrolyte includes therein a gel
phase, in which the crosslinked polymer is swelled with the electrolyte solution, and a
separated phase of electrolyte solution.